

AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A proactive user interface for a computational device, the computational device having an operating system, comprising:

(a) an interface unit for communicating between a user and said operating system; and

(b) a learning module for detecting at least one pattern of interaction of the user with said interface unit and for proactively altering at least one function of said interface unit according to said detected pattern.

2. (Previously Presented) The proactive user interface of claim 1, wherein said at least one pattern is selected from the group consisting of a pattern determined according to at least one previous interaction of the user with said interface unit, and a predetermined pattern, or a combination thereof.

3. (Previously Presented) The proactive user interface of claim 1, wherein said interface unit features a graphical display and said altering at least one function of said interface unit comprises altering at least a portion of said graphical display.

4. (Original) The proactive user interface of claim 3, wherein said altering at least a portion of said graphical display comprises:

selecting a menu for display according to said detected pattern; and
displaying said menu.

5. (Original) The proactive user interface of claim 4, wherein said selecting said menu comprises:

constructing a menu from a plurality of menu options.

6. (Previously Presented) The proactive user interface of claim 1, wherein said interface unit features an audio display and said altering at least one function of said

interface unit comprises altering at least one audible sound produced by the computational device.

7. (Previously Presented) The proactive user interface of claim 1, wherein the computational device is selected from the group consisting of a regular computer, an ATM, mobile information devices including a cellular telephone, a PDA, or a consumer appliance having an operating system.

8 – 108 (Cancelled)

109. (Previously Presented) The proactive user interface of claim 7, wherein said learning module comprises a knowledge base for holding information gathered as a result of interactions with the user and/or the operating system.

110. (Previously Presented) The proactive user interface of claim 109, wherein said knowledge base comprises a plurality of integrated knowledge determined from the behavior of the user and from preprogrammed information.

111. (Previously Presented) The proactive user interface of claim 109, wherein said learning module further comprises a plurality of sensors for perceiving a state of the operating system.

112. (Previously Presented) The proactive user interface of claim 111, wherein said learning module further comprises a perception unit for processing output from said sensors to determine a state of the operating system and a state of said interface unit.

113. (Previously Presented) The proactive user interface of claim 112, wherein said learning module further comprises a reasoning system for updating said knowledge base and for learning an association between an alteration of said interface unit and a state of the operating system.

114. (Previously Presented) The proactive user interface of claim 109, wherein said learning module further comprises at least one of an artificial intelligence algorithm and a machine learning algorithm.

115. (Previously Presented) The proactive user interface of claim 109, wherein said learning module maximizes a percentage of proactive alterations leading to a direct user selection from said alteration.

116. (Previously Presented) The proactive user interface of claim 115, wherein said maximization is performed through learning reinforcement.

117. (Previously Presented) The proactive user interface of claim 116, wherein said learning reinforcement is performed through an iterative learning process.

118. (Previously Presented) The proactive user interface of claim 117, wherein each iteration of said learning process is performed after said alteration has been performed.

119. (Previously Presented) The proactive user interface of claim 1, wherein said proactively altering at least one function of said interface unit comprises activating an additional software application through the operating system.

120. (Previously Presented) The proactive user interface of claim 119, further comprising an intelligent agent capable of communicating with a human user.

121. (Previously Presented) The proactive user interface of claim 120, wherein said intelligent agent controls at least one interaction of the computational device over a network.

122. (Previously Presented) A method for a proactive interaction between a user and a computational device through a user interface, the computational device having an operating system, the method comprising:

detecting a pattern of user behavior according to at least one interaction of the user with the user interface by using a learning module; and

proactively altering at least one function of the user interface according to said pattern.

123. (Previously Presented) The method of claim 122, wherein said at least one pattern is selected from the group consisting of a pattern determined according to at least one previous interaction of the user with said user interface, and a predetermined pattern, or a combination thereof.

124. (Previously Presented) The method of claim 122, wherein said user interface features a graphical display and said altering at least one function of said user interface comprises altering at least a portion of said graphical display.

125. (Previously Presented) The method of claim 124, wherein said altering at least a portion of said graphical display comprises:

selecting a menu for display according to said detected pattern; and
displaying said menu.

126. (Previously Presented) The method of claim 125, wherein said selecting said menu comprises:

constructing a menu from a plurality of menu options.

127. (Previously Presented) The method of claim 122, wherein said user interface features an audio display and said altering at least one function of said user interface comprises altering at least one audible sound produced by the computational device.

128. (Previously Presented) The method of claim 122, wherein the computational device is selected from the group consisting of a regular computer, an ATM, a cellular telephone, a mobile information device, a PDA, or a consumer appliance having an operating system.

129. (Previously Presented) The method of claim 122, wherein said learning module comprises a knowledge base, and the method further comprises holding information gathered as a result of interactions with the user and/or the operating system by using said knowledge base.

130. (Previously Presented) The method of claim 129, wherein said knowledge base comprises a plurality of integrated knowledge determined from the behavior of the user and from preprogrammed information.

131. (Previously Presented) The method of claim 129, wherein said learning module further comprises a plurality of sensors, and uses said sensors to perceive a state of the operating system.

132. (Previously Presented) The method of claim 131, wherein said learning module further comprises a perception unit, and uses said perception unit to process output from said sensors and determine a state of the operating system and a state of said user interface.

133. (Previously Presented) The method of claim 132, wherein said learning module further comprises a reasoning system, and uses said reasoning system to update said knowledge base and learn an association between an alteration of said user interface and a state of the operating system.

134. (Previously Presented) The method of claim 129, wherein said learning

module further comprises at least one of an artificial intelligence algorithm and a machine learning algorithm, and the method is performed by the learning module.

135. (Previously Presented) The method of claim 129, wherein said learning module maximizes a percentage of proactive alterations leading to a direct user selection from said alteration.

136. (Previously Presented) The method of claim 135, wherein said maximization is performed through learning reinforcement.

137. (Previously Presented) The method of claim 136, wherein said learning reinforcement is performed through an iterative learning process.

138. (Previously Presented) The method of claim 137, wherein each iteration of said learning process is performed after said alteration has been performed.

139. (Previously Presented) The method of claim 122, wherein said proactively altering at least one function of said user interface comprises activating an additional software application through the operating system.

140. (Previously Presented) The method of claim 139, wherein the method is performed using an intelligent agent capable of communicating with a human user.

141. (Previously Presented) The method of claim 140, wherein said intelligent agent controls at least one interaction of the computational device over a network.

142. (Cancelled)

143. (Cancelled)

144. (Cancelled)

145. (Cancelled)

146. (Cancelled)
147. (Cancelled)
148. (Cancelled)
149. (Cancelled)
150. (Cancelled)
151. (Cancelled)
152. (Cancelled)
153. (Cancelled)
154. (Cancelled)
155. (Cancelled)
156. (Cancelled)
157. (Cancelled)
158. (Cancelled)
159. (Cancelled)
160. (Cancelled)
161. (Cancelled)
162. (Cancelled)
163. (Cancelled)
164. (Cancelled)
165. (Cancelled)
166. (Cancelled)
167. (Cancelled)
168. (Cancelled)
169. (Cancelled)
170. (Cancelled)
171. (Cancelled)
172. (Cancelled)
173. (Cancelled)
174. (Cancelled)
175. (Cancelled)

- 176. (Cancelled)
- 177. (Cancelled)
- 178. (Cancelled)
- 179. (Cancelled)